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SCIENTIST/ENGINEER SF , PLANETARY SCIENCE BRANCH
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RESEARCH AREAS

- ❖ Condensed matter Physics - High T_c Superconductors - Characterization of YBCO, BSCCO, La-224, La-2125 and Hg based and doped superconductors.
- ❖ Plasma Physics - Tokamak Plasma Diagnostics - Langmuir Probes, Diamagnetic loop assembly.
- ❖ Submillimeter Astronomy - Study of Star forming regions - GMC's, and Dark clouds using radiative transfer modeling and high resolution heterodyne spectroscopy techniques.

Current area of research – Planetary Science

- Study of Lunar plasma environment, Solar wind - Moon interaction, magnetic anomaly regions and space weathering on Moon.
- Study of Martian plasma environment - Escaping plasmas and its role on Martian atmosphere/ionosphere
- Study of Solar wind-planetary body interaction using mass spectrometry techniques.
- Study of solar wind and its electron velocity distribution and composition.
- Development of space borne plasma analysers

Academic Qualifications

- Ph.D (Physics) - Saurashtra University, Rajkot, - 2001
- M.Sc (Physics) - Saurashtra University, Rajkot, - 1997
- B.Ed (Physical Sciences) - Annamali University, Chidambaram - 1995
- B.Sc (Physics) - Madurai Kamaraj University, Madurai - 1992

Teaching Experience

- One year as Adhoc Lecturer in Physics, Christ College, Rajkot
- One year as Higher Secondary Physics Teacher in S.N. Kansagara School, Rajkot.
- Three years as science teacher in Mount Sinai High School, Wokha, Nagaland.

Professional Background

- Junior Research Fellow (JRF) - DAE -BRNS - 1997 -1998
- Senior Research Fellow (SRF) - DAE -BRNS - 1999 -2000
- Post Doctorate Fellow (PDF)- Institute for Plasma Research (IPR) - 2001 -2002
- Scientist - SD - Physical Research Laboratory (PRL) - 2002-2007
- Scientist - SD - Space Physics Laboratory , VSSC - 2007-2010
- Scientist - SE - Space Physics Laboratory, VSSC - 2010 - 2014
- Scientist - SF - Space Physics Laboratory, VSSC - 2014 - present

Projects and Programs

- **Principal investigator (PI)** of diamagnetic loop assembly for Steady State Tokamak-1
- **PI** of Langmuir probe array for Steady State Tokamak-1
- **Co-PI** of submillimeter wave program of PRL
- **PI** on Low Energy Ion Mass Analyser (LEIMA)
- **Co-PI** on PLasma Energy eXplorer (PLEX)
- **Project manager** (Payload development) of **MENCA** payload onboard **Mars Obiter Mission (MOM)**
- **Project manager**(payload development) of **CHACE-2** payload onboard **Chandrayaan-2 lunar mission**
- **PI** of Plasma Analyzer Package for Aditya (**PAPA**) payload of **Aditya-L1 Mission**
- **In charge** - High Vacuum Space Simulation Facility (HVSSF) of SPL

Awards and Honors

- National students Merit Scholarship awarded during 1987-1989
- Awarded Junior Research Fellowship (JRF) and Senior Research Fellowship (SRF) by DAE-BRNS, BARC, Mumbai
- Best paper award (Co-author)- NSSS-2014

Deputations/Assignments

- ❖ Visited Max-Planck-Institute for Astrophysics, Garching, GERMANY and attended the workshop on "*Modeling the structure, chemistry and appearance of protoplanetary disks*" held during April 13-17, 2004 in **Ringberg Castle, Bavaria, Germany** and presented a paper on "*Sub-mm study of star forming regions and radiative transfer modeling - an approach*".
- ❖ Visited Beijing Institute of Technology and attended the 36th COSPAR scientific assembly held at **Beijing, China** during 2006 and presented the work on "**Spectroscopic study of submillimeter lines from dark quiescent clouds**".
- ❖ Capacity building workshop on *Lunar and Planetary surface Science* at Harbin Institute of Technology, **Harbin, China** during 06-19 September, 2009
- ❖ One month hands on training on Space borne plasma analysers at **Mullard Space Science Laboratory (MSSL), United Kingdom (UK)** during April 8 - May 6, 2013

Professional Responsibilities

- **Member**- LOC (Special session) "*International Conference on Microwave and Remote Sensing - ICMARS-2003*" held at Jodhpur.
- **Secretary** -"*International Conference on Submillimeter Science and Technology -ICSST 04*" held during October 13-15, 2004 at Physical Research Laboratory, Ahmedabad.
- **Member** of Local scientific advisory committee - ICSST 04, PRL, 2004
- **Editor** of ICSST 04 proceedings.
- **Member** of LOC- International Conference on Solar Cycle-24 (ICSC-24) held at Physical Research Laboratory.
- **Member** - Program & Planning Cell (PPC)- SPL-VSSC
- **Co-convener** - PS5 Session - National Space Science Symposium - NSSS 2014
- **Member** of LOC, National Conference on Atomic and Molecular Physics (NCAMP), during 9-12 December 2014 at IIST, Thiruvananthapuram.
- **Reviewer** - Acta Astronautica (Elsevier)
- **Convener** - PS5 Session - National Space Science Symposium - NSSS 2016
- **Member** - Aditya L1 mission Working Group

Laboratory Responsibilities

- ❖ Member - Academic Committee of Space Physics Laboratory (SPL).
- ❖ Member - Laboratory Council of SPL.
- ❖ Member - Doctoral Committee of SPL
- ❖ Member - IRC, SPL
- ❖ Member - PCC, SPL

Publications

- Twelve in refereed Journals
- Four in refereed Conference proceedings
- Fifteen in Conference proceedings
- Five technical reports

Invited talks/Lectures and Conference Presentations

- ❖ Seven invited talks
- ❖ Twenty six conference presentations
- ❖ Ten lectures - JRF's, IITP and for College students

Research Supervision

- Ph. D students - Two (undergoing)
- M.Phil projects - Two
- M.Sc projects - Four
- M.Tech - Two

Membership in professional bodies

- Member of Astronomical Society of India (ASI)
- COSPAR associate
- Indian Science Congress Association (ISCA)
- Indian Space Scientists Association (ISSA)
- Indian Society of Systems for Science and Engineering (ISSE)

Recognized Research guide

- ✓ University of Kerala, Thiruvananthapuram
- ✓ University of Calicut
- ✓ CUSAT, Cochin

Participation in ISRO-DOS sports/games events

- Inter centre ISRO-DOS outdoor games - 2004, Ahmedabad - Volley ball, Ball badminton

- Inter centre ISRO-DOS outdoor games - 2008, Thiruvananthapuram - Volley ball.
- Inter centre ISRO-DOS indoor games - 2010, Ahmedabad - Shot-put, Discuss throw.
- Inter centre ISRO-DOS indoor games - 2012, SHAR - Volley ball
- Inter centre ISRO-DOS outdoor games - 2013, NRSC-Hyderabad- basket ball.
- Inter centre ISRO-DOS indoor games - 2015, SCL, Chandigarh - Volley ball

Publications in Refereed Journals:

1. Effect of Sr- substitution on the restitution of superconductivity in Pr-substituted at rare earth and Ba- site in $\text{EuBa}_2\text{Cu}_3\text{O}_z$.
R.S. Thampi, S. Rayaprol, Krushna Mavani, D.G. Kuberkar, M.R. Gonal, Ramprasad and R. G. Kulkarni. *Physica C*, 355 (2001) 23-30
2. Structural and superconducting properties of $\text{La}_{2-x}\text{R}_x\text{Ba}_2\text{Ca}_y\text{Cu}_{4+y}\text{O}_z$ (R= Nd, Gd, $y=2x$)
D.G. Kuberkar, **R.S. Thampi**, Nikesh A. Shah, S. Rayprol, S.K. Malik, Y.B. Yelon and R. G. Kulkarni. *Journal of Appl. Physics.No.11, Vol. 89.(2001)*
3. Dependence of superconductivity on hole concentration (P_{sh}) in La-2125 perovskite system.
D.G. Kuberkar, Nilesh A. Shah, **R. S. Thampi**, M.R. Gonal, RamPrasad and R. G.Kulkarni. *Physica B 281 & 282(2000) 924-925.*
4. Effect of hole filling by Co and hole doping by Ca on the superconductivity of $\text{GdBa}_2\text{Cu}_3\text{O}_{7-\delta}$
D.G. Kuberkar, Nikesh A. Shah, **R.S. Thampi**, S. Rayaprol, M.R. Gonal, RamPrasad and R. G. Kulkarni.
International Journal of Inorganic Materials 3,1, 59 (2001).
5. Structural Investigations of La-2125 Mixed Oxide Superconducting System
S.Rayaprol, Krushna Mavani, D.S. Rana, C.M. Thakker, **R.S.Thampi**, D.G.Kuberkar, R.G. Kulkarni and S.K.Malik
Journal of Superconductivity: Incorporating Novel Magnetism, Vol.15, No.3, June 2002
6. Spectroscopic study of 'CO' and its isotopic mm/submillimeter lines from dark cloud Lynds 183
R.S. Thampi and Laurent Pagani
Journal of Astronomy and Astrophysics, 31, 31-41 (2010)
7. A Novel probe for in-situ Electron density and Neutral Wind (ENWi) measurements in the near Earth space

G. Manjun, R. Sridharan, P. Sreelatha, Sudha Ravindran, M.K. Madhav Haridas, Tarun K. Pant, P. Pradeep Kumar, **R. Satheesh Thampi**, Neha Naik, N. Mridula, Lijo Jose, S.G. Sumod

Journal of Atmospheric and Solar-Terrestrial Physics 74 (2012) 81-86

8. Investigation of the solar wind - Moon interaction onboard Chandrayaan-1 mission with the SARA Experiment,

S. Barabash, A. Bhardwaj, M. Wieser, R. Sridharan, T. Kurian, S. Varier, E. Vijayakumar, V. Abhirami, K. V. Raghavendra, S. V. Mohankumar, M. B. Dhanya, **S. Thampi**, K. Asamura, H. Andersson, Y. Futaana, M. Holmstrom, R. Lundin, J. Svensson, S. Karlsson, R. D. Piazza and P. Wurz, *Current Science* (2009), 96, 526-34

9. Proton entry into the near-lunar plasma wake for magnetic field aligned flow, M. B. Dhanya, A. Bhardwaj, Y. Futaana, S. Fatemi, M. Holmström, S. Barabash, M. Wieser, P. Wurz, A. Alok, **R. S. Thampi**, *Geophysical Research Letters*, 40, 1-5 (2013), doi:10.1002/grl.50617.

10. MENCA experiment aboard India's Mars Orbiter Mission

Anil Bhardwaj, S. V. Mohankumar, Tirtha Pratim Das, P. Pradeepkumar, P. Sreelatha, B. Sundar, Amarnath Nandi, Dinakar Prasad Vajja, M. B. Dhanya, Neha Naik, G. Supriya, **R. Satheesh Thampi**, G. Padma Padmanabhan, Vipin K. Yadav and A. V. Aliyas, *Current Science*, Vol.109, No.6, 1106 25 September 2015.

11. MENCA onboard the Indian Mars Orbiter Mission

Anil Bhardwaj, ... , **R. Satheesh Thampi**..., and A.V. Aliyas(2015), , *Physics Education*, Volume 31, Issue 3, July -September 2015, 1 -8

12. On the evening time exosphere of Mars: Result from MENCA aboard Mars Orbiter Mission

Anil Bhardwaj, ... , **R. Satheesh Thampi**, ... (2016), , *Geophysical Research Letters*,(Accepted)